

Appln. No. 09/896,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

REMARKS/ARGUMENTS

These remarks are made in response to the Office Action of October 06, 2004 (Office Action). As this response has been timely filed within the 3-month shortened statutory period, no fee is believed due.

In paragraph 2 of the Office Action, the Examiner has rejected claims 1-4, 7-10, 13-15, and 17-19 under 35 U.S.C. § 102(b) as being anticipated by PCT Publication WO 98/33125 to Olsen, *et al.* (Olsen). In paragraph 3 of the Office Action, the Examiner has rejected claims 5, 6, 11, 12, 16, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Olsen in view of Official Notice. In paragraph 4 of the Office Action, the Examiner has rejected claims 21 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Olsen in view of U.S. Patent No. 6,073,109 to Flores, *et al.* (Flores).

Responsive to the Office Action, Applicants have amended claims 1 and 7 to correct a minor informality as noted in the listing of claims. Applicants have also amended claims 21 and 22 to clarify that the steps occur within a message adaptor, as supported by FIGS. 1 and 2 and throughout the specification. No new matter has been added.

A brief review of Applicants' invention may be helpful prior to addressing the rejections on the art. Applicants' claimed invention has been designed to solve the problem with integrating separate and heterogeneous IT systems that participate in retail transactions. These systems have evolved over time as technologies and the marketplace have evolved so that it is now beneficial to intercommunicate, where such a need did not exist in the past. Significantly, the Applications' claimed invention permits these

Appln. No. 09/896,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

heterogeneous retail systems to communicate without altering code of each system though the use of message adaptors. The message adaptors can be configured for designated retail channels in which the associated retail systems participate.

Specifically, the Applicants' solution includes the use of a message adaptors, each adaptor being added to an existing retail system, each adaptor converting messages between an associated retail system and a common message format, where the adaptors communicate between one another (thereby permitting intersystem communications) using the common message format. In one embodiment, the common message format can be based upon a user definable and standardized markup language, like the extensible markup language (XML).

In one embodiment, the Applicants further claim that retail systems communicate with each other using a peer-to-peer architecture. In this architecture, each adaptor maintains awareness of the identities of at least a portion of the peers in the retail system and uses this awareness when establishing communications with peer systems.

In another embodiment, the Applicants claim that retail systems communicate with each other using a data control point, which maintains communications among the various systems. In this architecture, each system need not be aware of the communication specifics or identity of other systems, which it communicates with, but needs only to direct messages to the data control point. The data control point can

Appln. No. 09/895,771
Amdt. dated Jan. 36, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

determine which systems should be conveyed received messages and can responsively convey suitable messages to the determined systems.

Turning to the rejections on the art, Olsen recognizes the same problem as that addressed by the Applicants, but solves this problem in a very different manner. That is, Olsen recognizes the need for heterogeneous distributed IT systems to communicate with one another. Olsen is silent in regard to establishing communications along different retail channels and fails to acknowledge retail system specific concerns regarding different retail channels.

The teachings of Olsen focus upon the existence of a novel process definition language that allows for complex branching and looping logic and can capture constraints that govern the relationships between local action sequences and site to site exchanges. (page 7, column 17-19). This language defines nodes, arcs, and logic based upon nodes and arcs. Olsen teaches that a novel architecture can be constructed that utilizes the process definition language.

The novel architecture can permit various sites 101-103 to form an extended enterprise 100 in which the internal processes of each site 101-103 are coupled with the internal processes of other sites 101-103 via coordinated sequences of information exchanges (based upon the process definition language), as noted at page 6, lines 26-29 and page 7, lines 16-17. For the architecture to function, each site 101-103 must be redesigned to include a public process definition module 116a (page 8, lines 2-3) and a

Appln. No. 09/896,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

private process definition module 118a (page 8, lines 4-6), each built on top of the process definition language with complex special interpretations added for nodes and arch elements (page 8, lines 6-8). Additionally, objects 120a-c can be developed within the sites 101-103 that can use the process definition language and take both "private and public" actions (as noted at page 9, lines 7-9).

Applicants express some confusion as to how the complex architecture of Olsen is intended to function (see column 8, lines 11-32) and are not sure if one of ordinary skill in the art could utilize the process definition language (FIGS. 2-3) or the architecture based upon this language (FIG. 1 and 4) based upon the teachings in Olsen without significant inventive actions. This is not, however, important to the Applicants (nor to the Examiner) at this time.

What is important, is that Olsen fails to teach or suggest the use of message adaptors in any way. Olsen instead teaches that sites are to be redesigned for a novel language which includes operations for communicating among sites. This approach is a completely different form than that taken by the inventors, where adaptors can be added to pre-existing systems to permit these systems to communicate without otherwise altering code of the pre-existing systems.

The reason that Olsen is silent in regard to adaptors for communicating among sites in a heterogeneous system is due to the fact that no adaptors would be needed under the teachings of Olsen. Olsen teaches that the process definition language includes

Appln. No. 09/896,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

operations for communicating between sites. Each site is modified (completely redesigned) in accordance with the dictates of this language (page 8, lines 6-8).

For example, object definitions (120a) of Olsen use public process definitions (116a) and private process definitions (118a), as noted at page 9, lines 7-9. Applications 113-115 within the sites (see page 10, line 26 to page 11, line 16) use objects 120 (page 11, lines 7-9) and interact using the process definition language.

Referring specifically to the claims 1 and 7, the Applicants claim the steps of:

associating a plurality of message adaptors with corresponding retail integrated technology (IT) systems for processing common data in a plurality of retail channels, said association forming a peer-to-peer network;

intercepting in said adaptors data processing messages generated in said corresponding retail IT systems;

converting in said adaptors said intercepted data processing messages to a common message format; and,

forwarding each converted data processing message to others of said retail IT systems.

Appln. No. 09/896,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

Olson does not explicitly or implicitly teach message adaptors as claimed by the Applicants. For this teaching, the Examiner references page 13, lines 11-25 pertaining to the adaptor 483, 489 in server 480.

Many different types of adaptors exist and can be utilized within the field of computer science. The adaptors 488 and 489 are fundamentally different from the claimed message adaptor. The claimed message adaptor:

- 1) is associated with a corresponding retail integrated technology system
- 2) intercepts data processing messages generated in the corresponding retail IT system
- 3) converts the intercepted data to a common message format
- 4) forwards the converted data processing message to other retail IT systems.

That is, the message adaptor functions as a gateway between internal retail IT system operations (which continue as normal in a system specific and unmodified fashion) and external IT systems.

In Olsen, the adaptors 488 and 489 permit the execution engine 484 to communicate with applications 420 and 430. Inbound and outbound traffic is NOT handled by the adaptors 488 and 489, but is handled by the transporter 486, as noted in

Appln. No. 09/896,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

FIG. 4. Further, the sending and receiving of messages from users 440 and 450 occurs via manager set 482, and does not involve adaptors 488 and/or 489.

It is clear that adaptors 488 and/or 489 do not function as a demarcation point between private and public data (or between different retail systems). For example, on page 11, line 31 to page 12, line 5 Olsen teaches that human users 440 and 450 interact with site 102 view GUI's 465 and 475, during which the users are permitted to view and edit **public and private** processes.

Instead, adaptors 488 and/or 489 facilitate local communications within a site (as noted from page 11, lines 21-25 that site 102 is comprised by server 480 and that server 480 includes applications 420 and 430.) Thus, using reference notations from FIG. 1, the adaptors 488 and/or 489 would facilitate intra site communications (within site 102) with application 113, 114, and 115. Accordingly, the adaptors 488 and 489 are dissimilar in function, operation, and configuration from the claimed message adaptor.

Regarding the intercepting step, the Examiner cites page 9, line 17-page 10, line 8, which discusses a business object. The business object would be part of the object definition 120a that has nothing do to with a message adaptor. Recall from page 9, lines 7-9 that objects by object definition 120a are referenced by both private and public processes definitions. Consequently, the purchase order object CANNOT possibly anticipate the intercepting step that explicitly occurs within the message adaptor (not taught or contemplated by Olsen).

Appln. No. 09/895,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

Regarding the converting step, the Examiner again cites page 9, line 17 to page 10, line 8, which has no similarities with the claimed limitation.

Since rejections under 35 U.S.C. § 102(b) require each claimed limitation be expressly or implicitly contained within a cited reference, and since the message adaptors and its functions as claimed in the associating, intercepting, converting, and receiving steps is not expressly or implicitly taught by Olsen, the 35 U.S.C. § 102(b) rejection to claims 1 and 7 should be withdrawn, which action is respectfully requested. By extension, the 35 U.S.C. § 102(b) rejections to dependent claims 2-4 and 8-10 should be withdrawn, which action is respectfully requested.

Even though these dependent claims should now be in an allowable state, the Applicants point out that:

Referring to claims 2 and 8, Olsen does not teach that a common message format is a markup language, but instead expressly teaches that messages are conveyed using the novel process definition language.

Referring to claim 3 and 9, Olsen fails to teach that the message format is based on XML. The Examiner cites page 9, lines 3-9 that says object definitions 120a-c can be written in XML, which is entirely different. Olsen teaches MESSAGES conveyed between sites MUST follow the process definition language. Objects according to Olsen's teachings are referenced by both public and private definitions.

Referring to claims 4 and 10, Olsen fails to teach or suggest a data control point. A data control point from FIG. 2 of the instant application is a point external to the

Appln. No. 09/896,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

systems having adaptors that routes messages between the systems. The Examiner references the transporter 486 (internal to the server 480, which is internal to site 102) for teaching a data control point, which cannot operate as the claimed data control point (item 250 of FIG. 2). That is, Olsen claims that the transporter 486 passes messages between the execution engine 484 and the internet 104 and does not teach or suggest a central messaging hub in any fashion.

Referring to claims 13 and 17, Applicants claim the steps of:

- intercepting data processing messages in a retail information technology (IT) system for use in one type of retail channel;
- formatting data in said intercepted messages using a user-definable markup language; and,
- asynchronously communicating said formatted data to at least one other retail IT system for use in at least one other type of retail channel.

As mentioned above, Olsen fails to teach a data control point, or a user-definable markup language. Further, Olsen fails to discuss retail channels. Olsen does not intercept messages (internal to one system) and format them for a different system. Instead Olsen teaches that the overall structure of each system should be modified so that a process definition language can be used to communicate between different systems.

IBM Docket No. RPS9-2001-0006

Appln. No. 09/895,771
Amdt. dated Jan. 36, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

Since rejections under 35 U.S.C. § 102(b) require each claimed limitation be expressly or inimplicitly contained within a cited reference, and since the data control point, markup language formatting, and retail channels are not expressly or implicitly taught by Olsen, the 35 U.S.C. § 102(b) rejection to claims 13 and 17 should be withdrawn, which action is respectfully requested. By extension, the 35 U.S.C. § 102(b) rejections to dependent claims 14-15 and 18-19 should be withdrawn, which action is respectfully requested.

In paragraph 3, the Examiner has rejected claims 5, 6, 11, 12, 16, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Olsen in view of Official Notice. As noted above, Olsen fails to contemplate the Applicants' invention as claimed that permits heterogeneous systems to communicate without significant modification through the use of messaging adaptors, but instead teaches an alternate system for communicating between heterogeneous systems that requires each system to be re-designed in accordance with a novel architecture and a novel programming language.

Regarding claims 5, 6, 11, and 12 neither Olsen nor Officially Noticed material teach or suggest the Applicants claimed message adaptor that intercepts messages from within a system, converts the messages to a common message format, and conveys the messages in the common format to other systems. Since each claimed limitation must be taught or implied by the provided reference, and since Olsen and Official Notice fail in this regard, the 35 U.S.C. § 103(a) rejections to claims 5, 6, 11, and 12 should be withdrawn, which action is respectfully requested.

Appln. No. 09/895,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

Regarding claims 16 and 20, since neither Olsen nor Official Notice teach or suggest the data control point, markup language formatting, retail channels, and other limitations of claims 13 and 17, the 35 U.S.C. § 103(a) rejections to claims 16 and 20 should be withdrawn, which action is respectfully requested.

In paragraph 4 of the Office Action, the Examiner has rejected claims 21 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Olsen in view of U.S. Patent No. 6,073,109 to Flores, *et al.* (Flores). Flores teaches using linked workflows to manage business processes. While it may be possible to add the teachings of Flores to extend Olsen's process definition language, such a combination would have little in common with the Applicants' claimed invention. Flores fails to cure the deficiencies of Olsen.

Specifically, neither Olsen, Flores, nor any combination thereof teach or suggest a message adaptor as claimed by the Applicants. Further, neither Olsen, Flores, nor any combination thereof teach or suggest conveying retail channel specific messages between systems using message adaptors.

Additionally, the Examiner has admitted that Olsen fails to contemplate that common data can be modified. The reason for this is that, by Olsen's teachings modifying the common data would be equivalent to modifying the process definition language taught by Olsen. Flores does not provide teachings regarding updating software language and/or constructs based upon software languages. So although it might be possible to enhance the language taught by Olsen using teachings of Flores, the modifications suggested by the Examiner would contradict the teachings of Olsen in a fashion not compensated for by Flores. No one of ordinary skill in the art would therefore combine the teachings of Flores with the teachings of Olsen in the manner suggested by the Examiner. That is, for purposes of the Applicants claimed invention, there is no motivation to combine the references of Olsen and Flores in the manner suggested.

For all of the above reasons, the 35 U.S.C. § 103(a) rejections to claims 21 and 22 should be withdrawn, which action is respectfully requested.

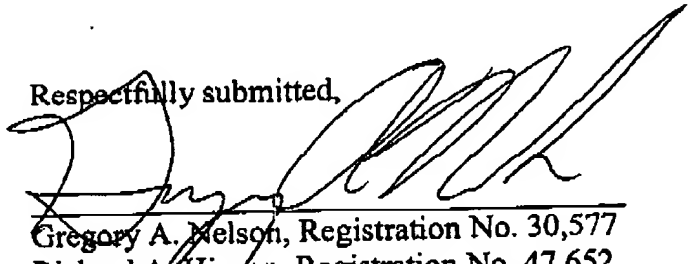
Appln. No. 09/896,771
Amdt. dated Jan. 06, 2005
Reply to Office Action of Oct. 06, 2004
Docket No. 6169-235

IBM Docket No. RPS9-2001-0006

The Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. The Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

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Respectfully submitted,



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